

being black ; the wings, the tail, and the preocular spot are black ; the upper wing-coverts are black with a scarlet band on the outer webs nearly in the middle, but not extending to the extremity of the feather ; the inner margins of the remiges are white ; the irides are rich brown ; the edges of the lower maxilla yellow ; tongue yellow ; legs and feet yellowish green ; soles yellow.

The young male is at first almost entirely greyish brown ; the throat is pale grey ; but quite below the maxilla and under the eyes the orange-red colour indicates the coming scarlet ; the back is greyish brown, but of a deeper colour in the uropygial region ; the wings and the tail are brownish grey ; the breast and under tail-coverts greenish fulvous ; the margins of the upper wing-coverts pale fawn-colour with, in some lights, reflections of red ; the margins of the remiges are olive-grey ; the throat, the front of the head, the breast, and the uropygial region are the first to assume the scarlet colour of the adult ; the angle of the wing has a dirty-white spot, which, with the olive-grey margins of the remiges, are the last to change to black.

The description of *M. pusilla*, as given on page 276 of the P. Z. S. for 1879 by Mr. W. A. Forbes, might apply to the bird under remark ; but as I have access to no library here, and have no specimens with which to compare my skins, I have not the means of satisfactorily determining them. Should this turn out to be a new species, it might bear the name of *MYZOMELA WAKOLOENSIS*.

At all events I am happy in being able to extend our knowledge of the distribution of this lovely genus to the Ceram group.

Amboina, December 15, 1882.

4. On the Geckos of New Caledonia.

By G. A. BOULENGER, F.Z.S.

[Received February 26, 1883.]

(Plates XXI. & XXII.)

The object of this paper is to serve as a guide to the identification of the Geckonidæ of New Caledonia, and to put order into their synonymy. As may be seen from the following bibliographical list, a good deal has been written on the subject before ; but, in their endeavours to identify the species described by them with those described by M. Bavay, the subsequent authors have in many cases added to the confusion. Having, through the kindness of Messrs. Bavay, Barboza du Bocage, and Sauvage, enjoyed the advantage of studying the typical specimens described by those gentlemen, which seemed to require reexamination, I have arrived at such results as will be of some use to the student of the New-Caledonian fauna and to herpetologists generally ; for a glance at the synonymies of the species will show how great was the confusion. Without bringing together and comparing carefully the typical specimens in the museums of

Brest, Lisbon, Paris, and Brussels with those in the British Museum, this work could not have been carried out; and I beg leave to express my sincere thanks to the heads of those scientific establishments for having enabled me to fulfil my object.

In order to render this paper a more useful guide, I have given a short description of every species. These are all original, and taken from typical or well-authenticated specimens. The synonyms referring to New-Caledonian specimens are preceded by *.

The number of species of Geckonidæ actually known from New Caledonia is fourteen; two are recorded here for the first time, one being new to science.

The following is a list of what has been published on the subject:—

1866. A. GUICHENOT. "Notice sur un nouveau genre de Sauriens de la famille des Geckotiens." Mém. Soc. Sc. Nat. Cherb. xii. pp. 248–252, pl. viii.

1869. A. BAVAY. "Catalogue des Reptiles de la Nouvelle Calédonie et description d'espèces nouvelles." Mém. Soc. Linn. Normand. xv. 37 pp. Also separately, Caen, 1872.

1873. A. GÜNTHER, in BRENCHLEYS' work, 'The Cruise of H.M.S. 'Curagoa,' describes, p. 407, *Peripia cyclura* from New Caledonia. Also Ann. & Mag. N. H. (4) x. p. 422 (1872).

1873. J. V. BARBOZA DU BOCAGE. "Geckotiens nouveaux ou peu connus de la Nouvelle Calédonie." Journ. Sc. Lisb. iv. pp. 201–207.

1878. G. A. BOULENGER. "Description d'un genre nouveau et d'une espèce nouvelle de la famille des Geckotides." Bull. Soc. Zool. France, 1878, pp. 68–70, pl. ii.

1878. H. E. SAUVAGE. "Note sur les Geckotiens de la Nouvelle Calédonie," Bull. Soc. Philom. (7) iii. pp. 63–73.

1879. G. A. BOULENGER. "Sur l'identité spécifique de *Chameleonurus trachycephalus* et *Platydactylus chahoua*," Bull. Soc. Zool. France, 1879, pp. 141, 142.

1881. J. V. BARBOZA DU BOCAGE. "Nota sobre a synonymia de alguano saurios da Nova Caledonia." Journ. Sc. Lisb. 1881, pp. 126–132.

The Geckos of New Caledonia belong to six genera, for the determination of which the following synopsis will suffice:—

- I. Digits strongly dilated, the distal phalanges slender, compressed, quite free, exerted from considerably within the extremity of the basal dilatation.
- A. Inner digit with free, clawed, distal phalanx; a double series of large lamellæ under the dilated portion of the digits 1. *Hemidactylus*, Cuv., p. 118.
- B. Inner digit without free phalanx, clawless; a transverse or angular series of narrow lamellæ under the dilated portion of the digits 2. *Gehyra*, Gray, p. 119.

- II. Digits more or less dilated, all but the inner with the distal joint compressed, short, clawed.
- A. Inner digit clawless; two series of oblique infradigital lamellæ divided by a median groove 3. *Lepidodactylus*, Fitz., p. 120.
- B. Inner digit clawed; infradigital lamellæ transverse, not divided by a groove; tail prehensile 4. *Rhacodactylus*, Fitz., p. 123.
- III. Digits strongly dilated, without compressed distal joint, all furnished with transverse, undivided lamellæ inferiorly; upper surfaces covered with large, flat, plate-like scales; tail prehensile 5. *Eurydactylus*, Sauvg., p. 129.
- IV. Digits not dilated, slightly depressed at the base; the distal phalanges slender, compressed, clawed, with a series of transverse plates inferiorly 6. *Gymnodactylus*, Spix, p. 129.

1. HEMIDACTYLUS, Cuv.

1. HEMIDACTYLUS GARNOTI. (Plate XXII. figs. 1, 1 a.)

Hemidactylus garnotii, Dum. & Bibr. *Exp. Gén.* iii. p. 368;
*Bavay, *Cat.* p. 13.

Doryura garnotii, Gray, *Cat. Liz.* p. 157.

Hemidactylus ludekingii, Bleek. *Nat. Tijds. Ned. Ind.* xvi. 1859,
p. 27.

This species, first discovered in Taiti, is mentioned by M. Bavay as being found in New Caledonia; and I entertain little doubt as to the correctness of the identification. The following characters are taken from three specimens in the British Museum (South-Sea Islands, Philippines, Agam) which agree in every point with Bibron's original description:—


Head much longer than broad; snout obtusely pointed, longer than the distance between the eye and the ear-opening, once and two thirds the diameter of the orbit; forehead slightly concave; ear-opening small, rounded. Body and limbs moderate, depressed. Digits free, or with a very slight trace of web, moderately dilated. A slight but distinct fold of the skin along the flanks, and another bordering the hind limb posteriorly. Upper surfaces and throat covered with minute granular scales, a little larger on the snout; abdominal scales moderate, imbricate. Nostril pierced between the rostral and three small nasals; twelve upper and nine or ten lower labials; mental large, triangular, in contact posteriorly with a pair of pentagonal chin-shields, followed by a second smaller pair; the anterior pair of chin-shields in contact with the first infralabial and with its fellow mesially; the posterior pair separated from each other and from the labials. Tail elongate, depressed, narrower than the body, with sharp denticulated lateral edge; the scales on the upper surface very small, equal; those on the lower surface larger, imbricate, with a median series of large, transversely dilated plates. Brownish-grey above, uniform or with small indistinct darker spots; lower surfaces uniform whitish.

| | millim |
|-------------------------|--------|
| Total length | 129 |
| Head | 16 |
| Width of head | 10 |
| Body | 44 |
| Fore limb | 20 |
| Hind limb | 27 |
| Tail | 69 |

2. GEHYRA, Gray.

2. GEHYRA VORAX. (Plate XXII. figs. 2, 2 a.)

Gehyra vorax, Girard, Proc. Ac. Philad. 1857, p. 197, and U. S. Explor. Exped., Herp. p. 274, pl. 16. figs. 1-8.

Head longer than broad; snout longer than the distance between the eye and the ear-opening, about once and a half the diameter of the orbit; forehead with a median groove; ear-opening narrow, suboval, horizontal. Body depressed. Limbs stout, short. Digits short, subequal, strongly dilated, webbed at the base, the inferior lamellæ not divided by a median groove, gently curved. A distinct fold of the skin along the flanks, and others bordering the fore limb anteriorly and the hind limb posteriorly. Upper surfaces and throat covered with minute granular scales; abdominal scales moderate, imbricate. Nostril pierced between the rostral, the first upper labial, and five small nasals; thirteen or fourteen upper, and eleven or twelve lower labials; mental small, pentagonal, in contact posteriorly with a pair of small elongate chin-shields bordered on each side by two smaller ones. Males with a long -shaped series of femoral pores, 25 to 30 on each side. Tail rounded, tapering, scarcely depressed, covered above with very small juxtaposed scales, inferiorly with larger imbricated scales, the median series being largest. Brown above, uniform, or with darker and lighter markings; lower surfaces uniform whitish.

| | millim. |
|-------------------------|---------|
| Total length | 237 |
| Head | 38 |
| Width of head | 29 |
| Body | 114 |
| Fore limb | 42 |
| Hind limb | 58 |
| Tail | 85 |

A specimen of this species from the Loyalty Islands is in the British Museum, and others from the New Hebrides, Fiji, and Norfolk Islands.

3. LEPIDODACTYLUS, Fitz.

Four species occur in New Caledonia.

- I. Body moderately elongate, the fore limb measuring more than half the distance from axilla to groin.
- A. Tail flat inferiorly, with sharpish lateral edge.
Four transverse rows of small chin-shields; males with a series of femoral pores..... 1. *lugubris*.
- B. Tail cylindrical.
Digits strongly dilated; males with two series of præanal pores 2. *eyclurus*.
Digits very feebly dilated; males with a single series of præanal pores 3. *sauvagii*.
- II. Body much elongate, the fore limb not measuring half the distance from axilla to groin.
Inner digit rudimental 4. *crepuscularis*.

3. LEPIDODACTYLUS LUGUBRIS. (Plate XXII. figs. 3, 3 a.)

Platydictylus lugubris, Dum. & Bibr. Erp. Gén. iii. p. 304; Jacquinet, Voy. Pôle Sud, Saur. pl. 1. fig. 1; Cantor, Cat. Mal. Rept. 16.

Lepidodactylus lugubris, Fitzing. Syst. Rept. p. 16.

Amydosaurus lugubris, Gray, Cat. Liz. p. 162.

Hemidactylus meyeri, Bleeker, Nat. Tijds. Nederl. Ind. xvi. 1859, p. 47.

Peripia cantoris, Günth. Rept. Brit. Ind. p. 110; Stoliczka, Journ. As. Soc. Beng. 1872, p. 103.

Gecko mæstus, Peters, Mon. Berl. Ac. 1867, p. 13.

* *Gymnodactylus candeloti*, Bavay, Cat. p. 13.

Peripia meyeri, Günth. Proc. Zool. Soc. 1872, p. 594.

Peripia mysorensis, Meyer, Mon. Berl. Ac. 1874, p. 129.

Peripia lugubris, Peters & Doria, An. Mus. Genov. xiii. p. 371.

* *Platydictylus (Lepidodactylus) crepuscularis*, Sauvage, Bull. Soc. Philom. (7) iii. p. 69 (nec Bavay).

Head much longer than broad; snout subacuminate, longer than the distance between the eye and the ear-opening, about once and a half the diameter of the orbit; forehead with a median groove; ear-opening small, round. Body and limbs moderate. Digits moderate, inner well developed, with a rudiment of web; inferior lamellæ numerous, seven or eight under the median fingers, eight or nine under the mediau toes. Upper surfaces and throat with very minute granules, a little larger on the snout; scales on the belly much larger, flat, juxtaposed or slightly imbricate. Rostral quadrangular, broad; nostril pierced between the rostral, the first upper labial, and two or three nasals, the upper separated from its fellow by one or three small internasals; eleven to thirteen upper and ten or eleven lower labials; mental small, smaller than the adjacent labials; four transverse rows of small chin-shields. Femoral pores present in the males, forming a long series angular mesially, 25 altogether. Tail flat inferiorly, with sharpish, sometimes feebly serrated lateral edge caudal scales small, flat, equal. Upper surfaces light pinkish grey

or brownish, generally with a series of small blackish or purplish-brown spots on each side of the vertebral line; a purplish-brown streak from the end of the snout to the ear, passing through the eye; labials generally finely dotted with brown; lower surfaces white, immaculate.

| | millim. |
|---------------------|---------|
| Total length..... | 81 |
| Head | 11 |
| Width of head | 8 |
| Body | 33 |
| Fore limb..... | 12 |
| Hind limb..... | 17 |
| Tail | 37 |

This widely distributed species extends from the Malay peninsula throughout the Indian archipelago, New Guinea, and the islands of the Pacific. From New Caledonia I have examined one specimen, presented by M. Delacour to the Paris Museum, and described by Dr. Sauvage as *Lepidodactylus crepuscularis*, Bavay. One of the characters pointed out by Dr. Sauvage as distinguishing the supposed latter species from *L. lugubris*, viz. the presence of a large gland on each side of the neck, is an individual (apparently pathological) character, and occurs in many species of the family Geckonidæ.

The *Gymnodactylus candeloti* of Bavay, of which I have examined the type, is based on a badly preserved specimen of the present species.

4. *LEPIDODACTYLUS CYCLURUS*. (Plate XXII. fig. 4.)

* *Platydactylus pacificus*, Bavay, Cat. p. 8 (nec Gray).

* *Peripia cyclura*, Günth. Ann. & Mag. N. H. (4) x. p. 422, and in Brenchley's 'Curaçoa,' p. 407.

* *Lepidodactylus neocaledonicus*, Bocage, Journ. Sc. Lisb. iv. p. 206.

* *Hemidactylus (Peripia) bavayi*, Sauvage, Bull. Soc. Philom. (7) iii. p. 71.

Head oviform, longer than broad; snout a little longer than the distance between the eye and the ear-opening, about once and one third the diameter of the orbit; ear-opening moderate, roundish. Body and limbs moderate. Digits moderate, inner well developed, with a slight rudiment of web; inferior lamellæ numerous, ten or eleven, all divided by a median groove. Upper surfaces and throat covered with very small granular scales, larger on the snout; abdominal scales larger, subimbricate. Rostral quadrangular, twice as broad as high; nostril pierced between the rostral, the first upper labial, and four or five small nasals, the upper separated from its fellow by three or five small internasals; nine to eleven upper and nine or ten lower labials; mental small, subtriangular, shorter than the adjacent labials, followed by a median chin-shield; a few other irregular chin-shields gradually passing into the granules of the throat. Males with two angular series of præanal pores; these series in contact and containing each 11 to 16 pores. Tail cylindrical, covered with small, equal, flat scales arranged in verticils. Upper surfaces brownish-

grey, with more or less irregular dark brown bands across the back ; sides with more or less distinct small round whitish spots ; a more or less indistinct dark streak on the side of the head, passing through the eye ; lower surfaces uniform whitish.

| | millim. |
|---------------------|---------|
| Total length | 117 |
| Head | 17 |
| Width of head | 13 |
| Body | 49 |
| Fore limb | 19 |
| Hind limb | 26 |
| Tail..... | 51 |

Five specimens, types of the species, collected by Mr. Brenchley in New Caledonia, are in the British Museum. I have also examined typical specimens of *Lepidodactylus neocaledonicus*, Bocage, and *Hemidactylus bavayi*, Sauv., which, on comparison, prove to be identical with this species.

Platydactylus pacificus of Bavay also belongs to this species, which is the most common Gecko of New Caledonia.

5. LEPIDODACTYLUS SAUVAGII, sp. n. (Plate XXII. figs. 5, 5a.)

* *Hemidactylus (Peripia) cyclura*, Sauvage, Bull. Soc. Philom. (7) iii. p. 72 (nec Günth.).

This species, which is known to me from a single specimen belonging to the Paris Museum, resembles the preceding in the proportions, scutellation, size, and colour, but differs in the much narrower digits, and the presence of a single series of præanal pores ; this series is composed of 23 pores.

6. LEPIDODACTYLUS CREPUSCULARIS. (Plate XXII. fig. 6.)

* *Platydactylus crepuscularis*, Bavay, Cat. p. 8.

Head oviform, much longer than broad ; snout as long as the distance between the eye and the ear-opening, about once and a half the diameter of the orbit ; ear-opening small, vertically oval. Body much elongate, limbs short, the fore limb not measuring half the distance between axilla and groin. Digits short, free, inner very small, rudimentary ; inferior lamellæ few, four or five under the median digits ; the borders of the digital expansions strongly denticulated. Upper surfaces and throat covered with very small granular scales, scarcely larger on the snout ; abdominal scales larger, subimbricate. Rostral quadrangular, twice as broad as high ; nostril pierced between the rostral, the first upper labial and three small nasals, the upper separated from its fellow by five small internasals ; 12 upper and 11 lower labials ; mental small, trapezoid ; no chin-shields. Male with ten præanal pores forming a short angular series. Tail cylindrical, covered with small, rhomboidal, imbricated scales ; these are distinctly raised on the sides of the tail, forming a slight denticulation.

Greyish-brown above, variegated with darker, and with small round white spots; a dark streak from the tip of the snout to the shoulder, passing through the eye; above this streak and behind the eye two round white spots; a round white spot on each of the digits; lower surfaces dirty white, the belly dotted with brown.

| | millim. |
|-------------------------|---------|
| Total length | 65 |
| Head | 8 |
| Width of head | 5 |
| Body | 28 |
| Fore limb | 8 |
| Hind limb | 11 |
| Tail | 29 |

This species is described from two female specimens in the British Museum, collected in New Caledonia by Mr. Brenchley, and hitherto confounded with *L. cyclurus*, and two others, male and young, the types of the species, communicated to me by M. Bavay.

4. RHACODACTYLUS, Fitz.

Under this name I propose to unite the Geckos which have the digits of the same structure as in the genus *Gecko* of Gray, but have besides the inner digit furnished with a sheathed claw. Accordingly *Correlophus*, Guich., *Ceratolophus*, Boc., and *Chamæleonurus*, Blgr., are referred to *Rhacodactylus*, Fitz., which was established for *Platydictylus leachianus*, Cuv., the characters upon which these genera were based not being, in my opinion, of more than subgeneric importance. This opinion, as concerns *Chamæleonurus*, has already been expressed by Prof. Barboza du Bocage; but, not having a sufficient knowledge of *R. leachianus*, and giving too great importance to the dermal appendages which characterize that species, I was not at first inclined to accept his view.

I have convinced myself that the species of this genus have the tail prehensile. As regards *P. ciliatus*, however, I have still some doubts, the specimens examined by me having that organ mutilated; but Guichenot's figure induces me to believe that such is also the case in that species.

The genus *Rhacodactylus* is confined to New Caledonia.

I. Dorsal scales uniform.

A. Digits half-webbed.

- Rostral separated from the nostril; scales on upper surface of head considerably larger than the granules on the back 1. *leachianus*.
- Rostral separated from the nostril; upper surface of head covered with minute granules not larger than those of the back 2. *aubryanus*.
- Rostral entering the nostril; upper surface of head covered with small granular scales almost as small as those of the back 3. *chahoua*.

- B. Digits not more than one-third webbed.
 Upper surface of head covered with very large
 unequal, subconical tubercles 4. *trachyrhynchus*.
 Hinder part of the head with knob-like prom-
 inences..... 5. *auriculatus*.
 II. A ciliated crest on each side, from the upper
 eyelid to the back 6. *ciliatus*.

7. RHACODACTYLUS LEACHIANUS.

Platydactylus leachianus, Cuv. R. A., 2nd edit. ii. p. 54; Dum. & Bibr. iii. p. 3¹5, pl. 28 f. 6; Gray, Cat. Liz. p. 160; *Bavay, Cat. p. 3.

Hoplodactylus (Rhacodactylus) leachianus, Fitzing. Syst. Rept. p. 100.

* *Rhacodactylus leachianus*, Bocage, Journ. Sc. Lisb. iv. p. 201.

Head large, oviform, elongate; forehead concave; snout longer than the distance between the orbit and the ear-opening, a little more than twice the diameter of the orbit; ear-opening narrow, horizontal. Body and limbs moderately elongate, rather depressed; digits moderately elongate, broad, not very unequal, half-webbed; limbs bordered on each side by cutaneous folds, most developed on the anterior side of the fore limbs and on the posterior side of the hind limbs; other cutaneous folds below the rami mandibulæ, on the sides of the neck, and from axilla to groin; throat with a few cross folds. Upper surface of head covered with small irregular polygonal convex scales larger than the granules of the back, elongated and more or less distinctly keeled on the forehead and snout; rostral twice as broad as high, with a more or less distinct median division above; nostril pierced between seven or eight small nasals and the first upper labial; upper labials 17 or 18; lower labials 14 to 17, anterior very high; mental narrow, elongate wedge-shaped, about the size of the proximal labials; no regular chin-shields, but a few larger scales passing gradually into the minute granules of the throat. Scales small, granular, smallest on the lower surfaces. [Males with a large patch of præanal pores¹.] Tail cylindrical, tapering, covered with uniform, small, flat, juxtaposed scales arranged in verticils. Grey or pinkish-grey above dotted and indistinctly marbled with brown, sometimes with large whitish spots; lower surfaces white, uniform.

| | millim. |
|---------------------|---------|
| Total length | 325 |
| Head | 59 |
| Width of head | 46 |
| Body | 152 |
| Fore limb | 70 |
| Hind limb | 84 |
| Tail..... | 115 |

The largest species of the family *Geckonidæ* at present known.
 This description is taken from two female specimens (one in the

¹ Dum. & Bibr. *l. c.*

Brussels Museum, the other in the Lisbon Museum) and a young (in the British Museum).

8. RHACODACTYLUS AUBRYANUS.

**Rhacodactylus aubryanus*, Bocage, Journ. Sc. Lisb. iv. p. 202, and 1881, p. 127.

Agrees in every respect with the preceding, except in having the upper surface of the head covered with minute granules, not larger than those covering the back. From snout to vent 195 millim.

I have examined the unique specimen of this form, belonging to the Lisbon Museum, and, in spite of its very great resemblance to *R. leachianus*, believe it to deserve, at least till we get other specimens for comparison, specific distinction.

9. RHACODACTYLUS CHAHOUA. (Plate XXI. figs. 1, 1 a, 1 b, 1 c, 1 d.)

**Platydictylus chahoua*, Bavay, Cat. p. 3.

General proportions of *R. trachyrhynchus*. Head oviform; snout longer than the distance between the orbit and the ear-opening; snout once and a half the diameter of the orbit; forehead concave; ear-opening narrow, horizontal. Body and limbs moderately elongate, not much depressed; digits broadly dilated, not very unequal, their border very distinctly denticulated (as in *R. ciliatus*), half-webbed; the web very short (though distinct) between the two outer toes; limbs bordered by cutaneous folds, most developed on the anterior side of the fore limbs and on the posterior side of the hind limbs; other cutaneous folds below the rami mandibulæ, on the sides of the neck, and from axilla to groin; the latter feeble; throat with irregular cross folds. Upper surfaces covered with very small equal granular scales, scarcely larger on the snout; gular scales minute, granular; abdominal scales very small, flat, juxtaposed. Rostral twice as broad as high; nostril pierced between the rostral, the first upper labial, and six or seven small nasals; thirteen or fourteen upper and twelve or thirteen lower labials; mental elongate wedge-shaped, as long as the adjacent labials, which it separates; no regular chin-shields, but a few larger scales passing gradually into the minute granules of the throat. Male with three short series of femoral pores on each side; these do not extend beyond the inner half of the thighs, and are separated from the corresponding series on the other side; I count $\frac{16}{15}$ pores on each side, there being, besides, one or two pores indicating a fourth series; altogether 79 pores. Grey above; whitish beneath, marbled with grey, forming transverse bars on the belly.

| | millim. |
|-------------------------------------|---------|
| Total length (tail rudimentary) . . | 140 |
| Head | 33 |
| Width of head | 22 |
| Body | 91 |
| Fore limb | 38 |
| Hind limb | 51 |

. Of this very distinct species I have examined the type specimen, a male, kindly communicated to me by M. Bavay. It comes from Kanala, Lifou.

10. RHACODACTYLUS TRACHYRHYNCHUS. (Plate XXI. figs. 2, 2 a, 2 b, 2 c, 2 d.)

**Platydactylus dwaucelii*, Bavay, Cat. p. 6 (nec D. & B.).

**Rhacodactylus trachyrhynchus*, Bocage, Journ. Sc. Lisb. iv. p. 203.

**Chameleomurus trachycephalus*, Bouleng. Bull. Soc. Zool. France, 1878, p. 68, pl. 2.

**Platydactylus* (*Rhacodactylus*) *chahoua*, Sauvage, Bull. Soc. Philom. (7) iii. p. 66 (nec Bavay).

**Chameleomurus chahoua*, Bouleng. Bull. Soc. Zool. France, 1879, p. 142; Bocage, Journ. Sc. Lisb. 1881, p. 126 (nec Bavay).

Head oviform; snout longer than the distance between the orbit and the ear-opening, once and two thirds the diameter of the orbit; ear-opening narrow, horizontal. Body and limbs moderately elongate, rather depressed; digits broadly dilated, not very unequal, with a distinct rudiment of web, absent between the two outer toes. Sides of neck with irregular folds. Snout and interorbital space with very large, unequal, rough tubercles confluent with the cranial ossification; hinder part of head, body, and limbs with very small, equal, granular scales, smallest on the throat. Rostral broad, quadrangular, with distinct median division above; nostril pierced between the first labial and five or six small nasals, the anterior being much the largest; nine to eleven upper labials; mental small, triangular; nine to eleven infralabials, gradually decreasing in size, inner pair nearly three times as high as broad, in contact behind the mental; a row of large scales behind the labials. Body and limbs covered with very small granular scales. Tail cylindrical, with uniform small flat juxtaposed scales arranged in verticils. Male with an irregular patch of very numerous præanal pores. Head brown; the rest of the upper surfaces grey, dotted with darker; lower surfaces dirty white, with scattered grey dots.

| | millim. |
|-------------------------|---------|
| Total length | 308 |
| Head | 38 |
| Width of head | 24 |
| Body | 115 |
| Fore limb | 50 |
| Hind limb | 66 |
| Tail | 155 |

This description is taken from two specimens in the British Museum and four others in the Brussels Museum. I have besides seen many others, including the specimen determined by M. Bavay as *Platydactylus dwaucelii*, D. & B. (This last-named species, of which I have examined one of the type specimens, belongs to a distinct genus, *Hoplodactylus*, Fitz.)

The synonymy of this Gecko has been lately rather confused.

I may relate how the confusion took place:—

Overlooking Bocage's description, I renamed the species in 1878 *Chamaleonurus trachycephalus*. Shortly afterwards, Sauvage re-described it as *Platydactylus chahoua*, Bavay, which it is not, treating *Rhacodactylus trachyrhynchus*, Bocage, as a synonym. The following year I published a note in which I referred my *C. trachycephalus* to *R. trachyrhynchus* and *P. chahoua*, having been informed by Dr. Sauvage that the three forms were identical. At that time I had not at hand Bavay's excellent monograph, which had been lent to me on the former occasion by M. Lataste, and was not able to reconsult the original description of *P. chahoua*; but believing Dr. Sauvage to have examined authenticated specimens, I did not think there was any reason for suspecting the accuracy of his statement. I was afterwards informed by Dr. Sauvage that the Paris specimens had simply been compared with Bavay's description; and as the latter is not at all applicable to *R. trachyrhynchus*, I came to the conclusion that this and *R. chahoua* were distinct species. This was confirmed by the examination of M. Bavay's typical specimen.

11. RHACODACTYLUS AURICULATUS.

Platydactylus auriculatus, Bavay, Cat. p. 6.

**Ceratolophus hexaceros*, Bocage, Journ. Soc. Lisb. 1873, p. 205.

**Platydactylus (Ceratolophus) auriculatus*, Sauvage, Bull. Soc. Philom. (7) iii. p. 67.

**Ceratolophus auriculatus*, Bocage, Journ. Sc. Lisb. 1881, p. 130.

Head subpyramidal; snout longer than the distance between the orbit and the ear-opening, once and two thirds the diameter of the orbit, slightly swollen at the end; interorbital space and forehead deeply concave; hinder part of head with knob-like prominences, viz. one above the ear-opening, formed by the free end of the quadrate, and five others formed by the extremities of the parietal bones; the borders and sutures of the latter forming prominent ridges; the ends of the postfrontal bones and mandible also prominent; ear-opening large, oval, oblique. Body and limbs moderately elongate, rather depressed; digits not very broadly dilated, not very unequal, with a very slight rudiment of web, which is altogether absent between the two outer toes. Throat and sides of neck with a few irregular folds; a slight fold bordering the hind limb posteriorly. Head and body covered with subequal small granular scales, flattened on the belly, smallest on the throat. Rostral quadrangular, not quite twice as broad as high, with a small notch in the middle of its upper border; nostril pierced between the rostral, the first upper labial and seven small nasals, the anterior being much the largest; 16 to 18 upper, and 14 or 15 lower labials; mental small, subtriangular, separating the inner labials; no regular chin-shields, but larger scales passing gradually into the granules of the throat. Tail cylindrical, covered with uniform small juxtaposed scales arranged in verticils. Male with an irregular patch of very numerous præanal pores, and a sort of pouch in the integument of the thigh posteriorly, near the tibia. Yellowish-grey, with darker and lighter longitudinal

bands on the back ; flanks and limbs marbled with darker ; lower surfaces dirty white, with scattered blackish dots.

| | millim. |
|-------------------------|---------|
| Total length | 205 |
| Head | 34 |
| Width of head | 27 |
| Body | 91 |
| Fore limb | 49 |
| Hind limb | 60 |
| Tail | 80 |

Described from a single male specimen belonging to the Lisbon Museum.

12. RHACODACTYLUS CILIATUS.

**Correlophus ciliatus*, Guichen. Mém. Soc. Sc. Nat. Cherb. xii. p. 249, pl. viii. ; *Bavay, Cat. p. 12.

Head very large, oviform, very distinct from neck ; forehead deeply concave ; snout much longer than the distance between the orbit and the ear-opening, once and two thirds the diameter of the orbit ; ear-opening moderately large, suboval, horizontal, slightly oblique. Body and limbs moderately elongate, depressed ; digits moderate, not very unequal, strongly denticulated on the sides, half-webbed ; the web, however, almost entirely absent between the two outer toes. A strong fold of the skin bordering the hind limb posteriorly ; another fold from the eye to the anterior part of the back, where it is separated from its fellow by a rather narrow space ; a slight fold from axilla to groin. Head covered with granular scales, largest on the snout ; rostral quadrangular, twice as broad as high, with median division above ; nostril pierced between the rostral, the first upper labial and six small nasals ; upper labials 13, lower labials 12 or 13 ; mental small, wedge-shaped ; no chin-shields. Dorsal scales granular, intermixed with larger conical ones on the sides of the vertebral line ; the upper eyelid and the fold on the side of the head and anterior part of the back with long cilioid scales. Throat covered with small granular scales ; belly with small, slightly imbricated, smooth, roundish scales. [Tail long, slender, cylindrical, covered with small juxtaposed scales ; its distal extremity with a rounded flap of skin placed horizontally¹.] Yellowish or reddish-brown, lighter beneath.

| | millim. |
|---|---------|
| Total length (tail reproduced, rudimentary) | 109 |
| Head | 33 |
| Width of head | 24 |
| Body | 68 |
| Fore limb | 36 |
| Hind limb | 46 |

Described from two female specimens in the Brussels Museum.

¹ Guichenot, *l. c.*

5. EURYDACTYLUS, Sauvage.

13. EURYDACTYLUS VIEILLARDI. (Plate XXII. figs. 7, 7 a, 7 b.)

Platydactylus vieillardii*, Bavay, Cat. p. 10.Eurydactylus vieillardii*, Sauvage, Bull. Soc. Philom. (7) iii. p. 70.

Head not depressed, much longer than broad; snout long, obtuse, with slightly distinct canthus rostralis and scarcely oblique loreal region, measuring nearly twice the distance between the eye and the ear-opening, or once and three fourths the diameter of the orbit; pupil vertical, not round as stated by Bavay; ear-opening minute, horizontal. Body slightly compressed, the back keeled. Limbs short, digits strongly dilated, free. Scales of upper surfaces large, separated by intervals forming reticulated lines, much like crocodile-skin; the shields on the head larger, subsymmetrically arranged. Rostral twice as broad as high, with distinct median division above; nostril pierced between the rostral, the first labial and two nasals; ten upper and nine lower labials; mental small, triangular, the adjacent labials meeting behind; a few irregular chin-shields. Throat covered with small granules, with two strong transverse and two longitudinal folds. Belly covered with rather large flat granules. [Male with a triangular patch of about fifty præanal pores¹]. Tail cylindrical, prehensile, covered with squarish juxtaposed scales arranged in verticils. Upper surfaces reddish-yellow; the interspaces between the scales forming blackish reticulated lines; lower surfaces uniform whitish.

| | millim. |
|---------------------|---------|
| Total length..... | 91 |
| Head | 15 |
| Width of head | 9 |
| Body..... | 39 |
| Fore limb | 14 |
| Hind limb | 18 |
| Tail | 37 |

Described from a female specimen in the Paris Museum.

6. GYMNOACTYLUS, Spix.

14. GYMNOACTYLUS ARNOUXI. (Plate XXII. figs. 8, 8 a.)

Gymnodactylus arnouxi, A. Dum. Cat. Méth. Rept. p. 44, and Arch. Mus. viii. p. 479, pl. 17. f. 5; *Bavay, Cat. p. 13; Peters & Doria, Ann. Mus. Genov. xii. p. 372.

Heteronota pelagica, Girard, Proc. Ac. Philad. 1857, p. 197, and U.S. Explor. Exped., Herp. p. 306.

Gymnodactylus girardi, Steindachn. Novara, Rept. p. 15, pl. 2. f. 3.

Gymnodactylus multicarinatus, Günth. Ann. & Mag. N. H. (4) x. 1872, p. 421, and in Brenchley, Curaçoa, p. 404, pl. 24. f. A.

Gymnodactylus (Heteronota) arfakianus, Meyer, Mon. Berl. Ac. 1874, p. 129.

Head rather large, oviform; snout a little longer than the distance

¹ Bavay, *l. c.*

between the eye and the ear-opening, about once and two fifths the diameter of the orbit: forehead concave; ear-opening small, roundish. Body short, depressed; limbs moderate. Head covered with very small granular scales; rostral subquadrangular, not twice as broad as high, with median division superiorly; nostril pierced between the rostral, the first upper labial, two small nasals, and two or three granules; seven or eight upper, and as many lower labials; mental very large, triangular, pentagonal or trapezoid, extending considerably beyond the adjacent labials, generally with a pair of chin-shields posteriorly; no other chin-shields. Upper surfaces covered with very small granules; back with 16 to 20 longitudinal series of round, subconical, distinctly ribbed tubercles; these series regular, equidistant, the tubercles generally very close together, forming lines; hind limbs with similar irregularly scattered tubercles. Gular scales minute, granular; abdominal scales very small, imbricate, keeled. Males generally with a very short, A-shaped series of præanal pores, seven or eight altogether. Tail cylindrical, tapering, generally with very small uniform keeled scales, occasionally intermixed with large tubercles. Brown, lighter beneath; back and limbs with more or less distinct darker transverse markings; generally a dark streak from the eye to the ear-opening.

| | millim. |
|-------------------------|---------|
| Total length | 125 |
| Head | 18 |
| Width of head | 12 |
| Body | 42 |
| Fore limb | 19 |
| Hind limb | 29 |
| Tail | 65 |

This Gecko occurs from New Guinea and Cape York, throughout the Pacific Islands to New Zealand. The British Museum possesses a specimen from the Loyalty Islands.

EXPLANATION OF THE PLATES.

PLATE XXI.

Fig. 1. *Rhacodactylus chahoua*, upper view of head.

1 a. ———, profile of head.

1 b. ———, lower view of head.

1 c. ———, lower view of posterior part of body, thighs, and tail.

1 d. ———, lower view of foot.

2. ——— *trachyrhynchus*, upper view of head.

2 a. ———, profile of head.

2 b. ———, lower view of head.

2 c. ———, lower view of posterior part of body, thighs, and base of tail.

2 d. ———, lower view of foot.

All the figures are of the natural size.

PLATE XXII.

Fig. 1. *Hemidaactylus garnoti*, lower view of foot, magnified 2 diameters.

1 a. ———, lateral view of fourth toe, magnified 2 diam.